epiTRENDS

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Study of Cleft Defects in Washington State Shows Links to Maternal Age and Alcohol Consumption in Pregnancy

Oral clefts are among the most common birth defects, affecting approximately one in 700 live births in the United States. Cleft lip and palate are serious malformations that can profoundly affect quality of life. Clefts often impair speech, feeding, and tooth development, usually require multiple surgeries followed by extensive rehabilitation, and often result in emotional stress for affected children and their families.

Clefts can be divided into two major categories based on gestational onset: (1) cleft lip with or without cleft palate (CL+/-CP), and (2) cleft palate without cleft lip (CP). These categories can be further divided into (a) clefts that occur alone or with minor or secondary defects (i.e., "isolated") and (b) clefts that occur with other major defects.

The cause of oral clefts remains uncertain despite evidence for both hereditary and environmental factors. Researchers estimate that genetic predisposition plays a role in 20–40% of oral clefts. Prenatal exposures to alcohol, tobacco, lack of vitamin use, and some drugs and chemicals also may play an etiologic role, although findings have been inconsistent. Previous studies have shown that certain groups such as Asians and Native Americans had higher prevalences of cleft defects compared to other races and that older mothers were more likely to have infants with cleft defects than were younger mothers.

Hospitals in Washington offer extensive oral cleft repair and rehabilitation services. Because these facilities serve many out-of-state patients, data reported from these hospitals has contributed to speculation that rates of cleft defects in Washington may be inappropriately high. To characterize the prevalence of cleft defects among state residents and identify high-risk groups, Department of Health researchers in collaboration with the Centers for Disease Control and Prevention, used the Washington State Birth Defects Registry, a population-based, active registry, and Washington State birth certificates to identify all cleft case reports from 1987 to 1990 and compare them to other births in these same years.

TABLE 1: Distribution of cleft defects (n = 608) by cleft group in Washington State, 1987–1990

Cleft Group	Percentage
Cleft lip +/- cleft palate	
Isolated*	42.6
With other major defects	14.6
Cleft palate without cleft lip	
Isolated*	16.1
With other major defects	26.6

*Isolated means cleft defect(s) occurs alone or with minor or secondary defects.

Findings

From 1987–1990, 608 infants with cleft defects were born in Washington. Isolated cleft lip with or without cleft palate accounted for the largest percentage of defects (Table 1). The prevalences of CL+/-CP (1.2 per 1,000 live births) and CP (0.9 per 1,000 live births) were similar to those of other states with active birth defects registries, such as California and Hawaii.

Prevalences of cleft defects did not differ substantially by race/ethnicity (Table 2). Consistent with previous findings, male

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Cleft Defects *(from page 1)*

infants were at greater risk for isolated CL+/-CP (RR=1.5; 95% CI 1.2–2.0) than were females, but not for the other cleft categories. Analysis using 1989 and 1990 data, the only years for which alcohol data were available, showed that mothers who drank alcohol during pregnancy were more likely to have infants with cleft palate without cleft lip compared to nondrinking mothers. This increased risk was statistically significant for cleft palate with other major defects (RR=2.3; 95% CI 1.1-4.5) but not for isolated CP (RR=2.3; 95% CI 0.9-5.9). No difference was seen between drinking and nondrinking mothers for cleft lip with or without cleft palate. These findings should be interpreted with caution because 20% of cases lacked information on alcohol consumption and rates for drinking mothers could be unstable due to small numbers.

Unlike previous findings, younger mothers (< 20 years old) were twice as likely to have infants with isolated cleft lip with or without cleft palate (RR=2.0; 95% CI 1.4-2.7) compared to mothers of all other ages. No differences by maternal age were seen with the other cleft categories. Finally, case prevalence did not differ by maternal smoking during pregnancy, marital status, birth month, and urban/rural residency.

For this study, the availability of data from a large, population-based birth defects registry allowed examination of specific case groups. Such population-based analyses are not possible with birth certificate data alone because certificates do not include information on cleft defect categories. Study findings suggest potential at-risk groups and document that cleft rates are not higher for Washington State residents compared to residents of other states. Further population-based research about cleft risk factors could identify potential prevention strategies.

In 1991, due to resource constraints, Washington State transitioned from an active birth defects reporting system to a less sensitive passive system. The Department of Health is now evaluating future needs for birth defects surveillance.

For further information about this study, contact Lisa DeRoo at 360-664-2707 or Jim Gaudino, M.D., at 360-664-2419. For information about the current planning process for birth defects surveillance, contact Deb Lochner Doyle at 206-464-7752. ◆

TABLE 2: Prevalence of cleft defects by race/ethnicity in Washington State, 1987–1990

Group	Rates/1,000 Cleft Palate	Rates/1,000 Cleft Lip +/- CP
Asian/Pacific Islanders	0.8	1.5
Native Americans	0.9	1.3
Blacks	0.7	1.3
Whites	0.9	1.1
Hispanics	0.6	1.1

Genetics & Your Practice — *a free CME course*

The Washington State Department of Health and the March of Dimes Birth Defects Foundation offer a free course on clinical genetics and birth defects at various locations around the state. This educational program is funded by a federal grant from the HRSA/DHHS Maternal and Child Health Bureau.

For information on the course curriculum, a list of training dates and locations, or to schedule a training at your facility, conference, or event, please contact: Kelli Lynn, March of Dimes Birth Defects Foundation at 206-440-5840, or visit their website at: http://www.marchofdimes-wa.org/genetics.htm

For Further Information

Cleft Palate Foundation
1829 East Franklin Street
Suite 1022
Chapel Hill, NC 27514
Tel: 1-800-242-5338

DOH Begins Feasibility Study for Outpatient Data Collection

Health care delivery in Washington State is shifting away from a hospital-based system. Spurred by technological advancements, health practices improvements, and insurance reimbursement changes, various ambulatory and outpatient settings such as hospitals, emergency departments, and freestanding ambulatory surgery centers are increasingly providing services previously performed on an inpatient basis.

The Department of Health recommended to the 1997 Legislature that the state study the feasibility of collecting ambulatory and outpatient care data to enable DOH to better monitor outcomes and measure the effectiveness of care delivery. In May, Governor Locke signed a measure requiring DOH to conduct a study and submit a preliminary report to the Legislature by December 31, and a final report by July 1,1998.

In cooperation with potential data providers, DOH will prepare a report that addresses costs and benefits, data standards, reporting requirements, financing alternatives, data access, and dissemination factors for a monitoring system. The report also will prioritize data needs and propose implementation phases for data collection.

DOH is organizing work groups to conduct research and solicit comments from health system stakeholders (see Conferences, page 4). The information gathered will be used to prepare recommendations for the Legislature. For more information, call Hank Brown, director, Office of Hospital and Patient Data Systems, at 360-705-6007.

Monthly Surveillance Data by County

August 1997* – Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	AIDS	Pesticides†	Lead§#
Adams	0	0	0	0	0	0	0	0	0	2	0	0	2	0/0
Asotin	0	0	0	0	0	0	0	0	0	4	0	0	0	0/0
Benton	2	0	0	0	0	0	0	1	0	14	0	0	5	1/25
Chelan	0	0	0	1	0	0	0	0	0	8	0	0	7	0/#
Clallam	0	0	0	0	0	0	0	0	0	2	0	1	0	0/0
Clark	0	0	0	0	0	0	2	0	0	26	4	2	0	0/0
Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Cowlitz	0	0	0	0	0	0	0	0	1	4	0	1	1	0/10
Douglas	1	0	0	0	0	0	0	0	1	1	0	0	1	0/0
Ferry	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Franklin	0	0	0	0	0	0	0	0	0	9	0	0	4	0/0
Garfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Grant	1	1	0	0	0	0	0	0	0	5	1	0	3	0/0
Grays Harbor	0	0	0	0	0	0	0	0	1	6	1	0	0	0/0
Island	0	2	0	1	0	0	0	0	0	5	0	0	0	0/0
Jefferson	0	0	0	0	0	0	0	0	0	3	0	0	1	0/#
King	8	53	29	24	0	0	4	21	12	210	79	10	6	0/35
Kitsap	1	2	1	4	1	0	0	0	0	44	7	1	0	0/14
Kittitas	0	0	0	0	0	0	0	0	0	1	0	0	2	0/0
Klickitat	0	0	0	0	0	0	0	0	0	0	0	0	2	0/0
Lewis	1	0	0	0	1	0	0	0	0	2	1	0	1	0/#
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Mason	0	0	0	0	1	0	0	0	1	7	0	1	2	0/0
Okanogan	0	0	0	1	0	0	0	0	1	0	0	0	4	0/#
Pacific	0	0	0	2	0	0	1	0	0	2	0	0	1	0/0
Pend Oreille	0	0	0	0	0	0	0	1	0	0	0	0	0	0/#
Pierce	2	7	3	7	0	2	1	6	8	61	10	0	0	0/55
San Juan	0	1	0	0	0	0	0	0	0	2	0	0	0	0/0
Skagit	0	1	0	0	0	0	0	0	0	12	2	0	2	0/0
Skamania	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Snohomish	1	5	1	4	1	0	0	1	4	45	10	1	0	0/6
Spokane	2	2	2	8	0	0	1	3	1	26	1	0	4	0/27
Stevens	0	0	0	0	0	0	0	0	0	5	0	0	1	0/0
Thurston	0	0	2	0	0	0	1	0	1	24	2	0	0	0/#
Wahkiakum	0	0	0	0	0	0	0	0	0	0	0	0	0	0/0
Walla Walla	0	1	0	0	0	0	0	0	0	2	0	0	1	0/#
Whatcom	0	0	1	2	0	0	0	0	0	18	2	0	1	0/6
Whitman	0	0	0	0	0	0	0	0	0	0	0	0	0	0/#
Yakima	1	1	25	0	0	0	0	2	1	46	2	0	18	2/14
Unknown														0/0
Current Month	20	76	64	54	4	2	10	35	32	596	122	17	69	3/208
September 1996	25	62	44	10	4	3	10	76	25	836	134	52	39	27/636
1997 to date	53	392	183	368	52	20	66	251	215	6015	1257	406	287	104/2947
1996 to date	54	395	159	329	63	39	73	296	180	6523	1413	475	308	122/3558

* Data are provisional based on reports received as of August 31, unless otherwise noted.
† Unconfirmed reports of illness associated with pesticide exposure.
§# Number of elevated tests (data include unconfirmed reports) / total tests performed (not number of children tested); number of tests per county indicates county of health care provider, not county of residence for children tested; # means fewer than 5 tests performed, number omitted for confidentiality reasons.

Hood Canal Oyster Beds Closed Due to High Levels of *Vibrio*

On August 28 the Washington State Department of Health closed all oyster beds in Hood Canal for commercial and recreational harvesting until September 15. The closure was prompted by high levels of *Vibrio parahaemolyticus* and more than 50 reports of illness. Most cases were associated with eating raw or undercooked oysters.

The organism occurs naturally in marine waters and multiplies very quickly above temperatures of 50°F. Oysters, clams, and mussels can contain the organism. It is recommended that all shellfish be cooked to an internal temperature of at least 140°F. The closures for *V. parahaemolyticus* are independent of red tide closures, which result from high levels of toxin that are not killed by cooking. The red tide hotline (1-800-562-5632) lists closures due to the biotoxin. Information is also available at the DOH website: www.doh.wa.gov/ehp/sf/biotoxin.htm.

WWW Access Tips

Wide Smiles, a nonprofit organization focused on cleft defects, maintains a website with extensive information resources for patients and health care providers. The address is: http://www.widesmiles.org/

Questions? Comments?
If you have a question about epidemiologic or public health issues, contact the editors at the address on the mailing panel or by email at function@u.washington.edu

Conferences, Courses & Meetings

October 3
Seattle

Public Meeting on the Ambulatory Care Feasibility Study — The Department of Health has scheduled an information meeting on Wednesday, October 3, 9–11:30 a.m., at the West Coast SeaTac Hotel, Seattle. For information call Hank Brown at 360-705-6000.

Oct. 6–8
Wenatchee

Emerging Opportunities and Challenges: Creating a Healthier Tomorrow, The Fourth Annual Joint Conference on Health — For detailed information on the program, visit the Washington State Public Health Association website at: http://www.business-link.com/wspha, or call Kay DeRoos at 206-362-4728.

Oct. 30
Various Locations Statewide

Diabetes: A Life of Balance, A Community of Support — The Department of Health Diabetes Control Program is sponsoring a live, interactive satellite broadcast from the Centers for Disease Control and Prevention that will update research findings, review control efforts, and encourage partnerships. For information on downlinks (10 a.m. to noon PST) in Bellingham, Ephrata, Longview, Olympia, Seattle, Spokane, Pullman, and Yakima, call 253-872-2953.

Nov. 6
Bellevue

Type 2 Diabetes in Communities of Color — This conference for primary care providers, nurses, nutritionists, and other health professionals will translate scientific research on the prevention and control of diabetes into practical strategies. Sponsors include the DOH Diabetes Control Program, the Indian Health Service, and the VA Medical System. For information call 253-872-2953.

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